

AMENDMENTS TO THE CLAIMS

Listing Of Claims

Claims 1-24 (canceled)

25. (currently amended) A semiconductor component comprising:

a substrate having a chip scale surface;

a conductive layer on the surface;

~~comprising a metal having a selected thickness substantially covering the surface configured to provide a material for forming elements of the component by laser machining;~~

a plurality of conductors on the surface comprising first portions of the conductive layer configured for electrical transmission separated from one another by second portions of the conductive layer configured for no electrical transmission;

a plurality of grooves ~~in~~ through the conductive layer to the surface configured to define a shape and a spacing of each conductor, each groove having a micron sized width such that the conductors and the second portions substantially cover the surface; and
~~electrically isolating the conductors from the second portions, each groove defining a shape of a conductor and an adjacent second portion; and~~

at least one semiconductor die on the substrate in electrical communication with the conductors.

26. (currently amended) The semiconductor component of claim 25 wherein the width for each groove is equal.
~~each conductor has a width as small as about 5 μ m.~~

27. (currently amended) The semiconductor component of claim 25 wherein the width for each groove is about 5 μ m.
~~each groove has a width as small as about 5 μ m.~~

28. (currently amended) The semiconductor component of claim 25 wherein the conductors include a plurality of pads defined by the grooves and the at least one semiconductor die comprises a plurality of bumps bonded to the pads.

~~metal comprises copper and the selected thickness is about 18 μm .~~

29. (currently amended) The semiconductor component of claim 25 wherein ~~the~~ a thickness of the conductive layer and a size and spacing of the conductors and the width are selected to facilitate laser machining of the grooves.

~~provide a desired impedance value for the conductors.~~

30. (currently amended) A semiconductor component comprising:

a substrate having a surface;

a conductive layer comprising a metal on the surface having a selected thickness;

~~substantially covering the surface configured to provide a material for forming elements of the component by laser machining;~~

a plurality of conductors on the surface comprising portions of the conductive layer configured for electrical transmission, the conductors separated from one another by remaining portions of the conductive layer configured for no electrical transmission;

~~each conductor having a width as small as about 5 μm ;~~

a plurality of grooves in through the conductive layer to the surface, the grooves defining a size s and a shape s of the each conductor s and each the remaining portion, s, each groove having a same micron sized width; and ~~as small as about 5 μm ; and~~

at least one semiconductor die mounted to the substrate in electrical communication with the conductors.

31. (currently amended) The semiconductor component of claim 30 wherein the width is about 5 μ m.
~~metal comprises copper and the selected thickness is about 18 μ m.~~

32. (previously presented) The semiconductor component of claim 30 further comprising a plurality of conductive vias in the substrate in electrical communication with the conductors and with a plurality of contact balls on a second surface of the substrate.

33. (previously presented) The semiconductor component of claim 30 wherein the component comprises a chip module, a multi chip module or a package.

34. (previously presented) The semiconductor component of claim 30 further comprising an encapsulant at least partially covering the semiconductor die and at least a portion of the surface.

35. (currently amended) A semiconductor component comprising:

a substrate having a surface;

a conductive layer on the surface;

~~comprising a metal having a selected thickness substantially covering the surface configured to provide a material for forming elements of the component by laser machining;~~

a plurality of conductors on the surface comprising first portions of the conductive layer configured for electrical transmission;

a plurality of grooves in the conductive layer defining and electrically isolating the conductors, each groove having a same micron sized width;

a plurality of second portions of the conductive layer defined by the grooves and configured to separate the conductors without electrical transmission therethrough; and

a semiconductor die on the substrate in electrical communication with the conductors.

36. (currently amended) The semiconductor component of claim 35 wherein the component comprises a chip module, a multi chip module or a package.
~~conductors have a width as small as about 5 μ m.~~

37. (currently amended) The semiconductor component of claim ~~36~~ 35 further comprising an encapsulant at least partially covering the semiconductor die and at least a portion of the surface.
~~wherein the grooves have a width as small as about 5 μ m.~~

38. (currently amended) The semiconductor component of claim ~~37~~ 35 wherein a thickness of the conductive layer and the width are selected to facilitate laser machining of the grooves.
~~the selected thickness of the conductive layer is about 18 μ m.~~

39. (currently amended) The semiconductor component of claim ~~38~~ 35 wherein the width is about 5 μ m.
~~metal comprises copper.~~

Claims 40-46 (canceled)

47. (currently amended) A semiconductor component comprising:

- a substrate having a surface;
- a conductive layer on the surface;

~~comprising a metal having a selected thickness substantially covering the surface configured to provide a material for forming elements of the component by laser machining;~~

a plurality of conductors on the surface comprising portions of the conductive layer configured for electrical transmission;

a plurality of grooves in the conductive layer electrically isolating the conductors, each conductor having opposing edges defined by a pair of grooves and remaining portions of the conductive layer on either side separated from the opposing edges by the pair of grooves, each groove having a width of about 5 μm ; and

at least one semiconductor die on the substrate in electrical communication with the conductors.

48. (currently amended) The semiconductor component of claim 47 wherein ~~the~~ a thickness of the conductive layer and a size and a spacing of the conductors are selected to provide a desired impedance value for the conductors.

49. (currently amended) The semiconductor component of claim 47 wherein each conductor has a ~~first~~ second width of about 5 μm .

50. (currently amended) The semiconductor component of claim 47 wherein a thickness of the conductive layer and the width are selected to facilitate laser machining of the grooves.
~~each groove has a second width of about 5 μm .~~

51. (currently amended) The semiconductor component of claim 47 wherein the conductive layer includes an opening for attaching the die directly to the substrate.

52. (currently amended) A semiconductor component comprising:

a substrate having a surface;

a conductive layer on the surface;

~~substantially covering the surface comprising a metal configured to provide a material for forming elements of the component by laser machining;~~

a plurality of conductors on the surface having a size, a spacing, and a shape defined by a plurality of grooves through the conductive layer, each conductor comprising a first portion of the conductive layer configured for electrical transmission separated from an adjacent conductor by a groove and a second portion of the conductive layer which is not configured for electrical transmission, each groove having a same micron sized width;
~~with a thickness of the conductive layer and a size and spacing of the conductors selected to provide a desired impedance value for the conductors;~~

a plurality of conductive vias through the substrate in electrical communication with the conductors; and

a semiconductor die on the substrate in electrical communication with the conductors.

53. (currently amended) The semiconductor component of claim 52 wherein the ~~size and the spacing of the conductors is as small as~~ width is about 5 μm .